

6BH8

TRIODE-PENTODE

DESCRIPTION AND RATING

The 6BH8 is a general-purpose miniature tube which contains a sharp-cutoff pentode and a medium-mu triode in one envelope. Except for the electrical characteristics of the triode section, the 6BH8 is identical to the 6AU8. The triode section of the 6BH8 incorporates a lower amplification factor than the 6AU8 triode section and consequently may be used in applications where the lower amplification factor is desired.

Like the 6AU8, the tube is suitable for a wide variety of general-purpose applications in both monochrome and color television receivers. The high figure of merit of the pentode section makes it particularly suited for service as a video amplifier, video intermediate-frequency amplifier, and sound intermediate-frequency amplifier. The triode section is intended for use as a sync amplifier, separator, or clipper or as a sweep oscillator. The triode section may also be connected as a diode for video-detector applications, which adds to the over-all versatility of the tube.

In addition, the 6BH8, as a result of its controlled heater warm-up characteristic, is especially suited for use in television receivers which employ series-connected heaters. When the tube is used in conjunction with other 600-milliampere types which exhibit essentially the same heater warm-up characteristic, heater voltage surges across the individual tubes are minimized during the warm-up period.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC.....6.3 Volts

Heater Current.....0.6 Amperes

Heater Warm-up Time*.....11 Seconds

Direct Interelectrode Capacitances†

Pentode Section

Grid-Number 1 to Plate.....0.046 μf

Input.....7 μf

Output.....2.4 μf

Triode Section

Grid to Plate.....2.4 μf

Input.....2.6 μf

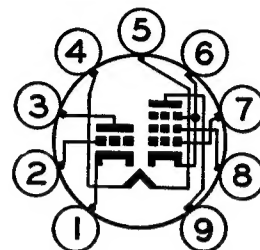
Output.....0.38 μf

Pentode Grid-Number 1 to Triode Plate.....0.004 μf

Triode Grid to Pentode Plate.....0.016 μf

Pentode Plate to Triode Plate.....0.095 μf

BASING DIAGRAM

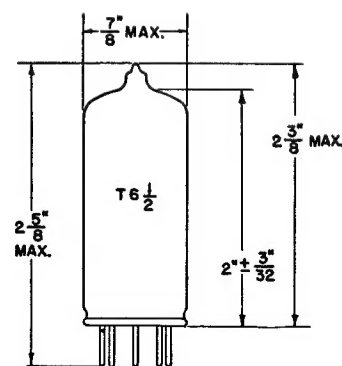


RETMA 9DX

TERMINAL CONNECTIONS

- Pin 1—Triode Cathode
- Pin 2—Triode Grid
- Pin 3—Triode Plate
- Pin 4—Heater
- Pin 5—Heater
- Pin 6—Pentode Cathode, Grid-No. 3 and Internal Shield
- Pin 7—Pentode Grid-No. 1
- Pin 8—Pentode Grid-No. 2 (Screen)
- Pin 9—Pentode Plate

PHYSICAL DIMENSIONS



RETMA 6-3

MECHANICAL

Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES

	Pentode Section	Triode Section
Plate Voltage	300	300 Volts
Screen-Supply Voltage	300	... Volts
Screen Voltage—See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage	0	0 Volts
Plate Dissipation	3.0	2.5 Watts
Screen Dissipation	1.0	... Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	100 Volts
Total DC and Peak	200	200 Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	200 Volts
Grid-Number 1 Circuit Resistance		
With Fixed Bias	0.25	0.5 Megohms
With Cathode Bias	1.0	1.0 Megohms

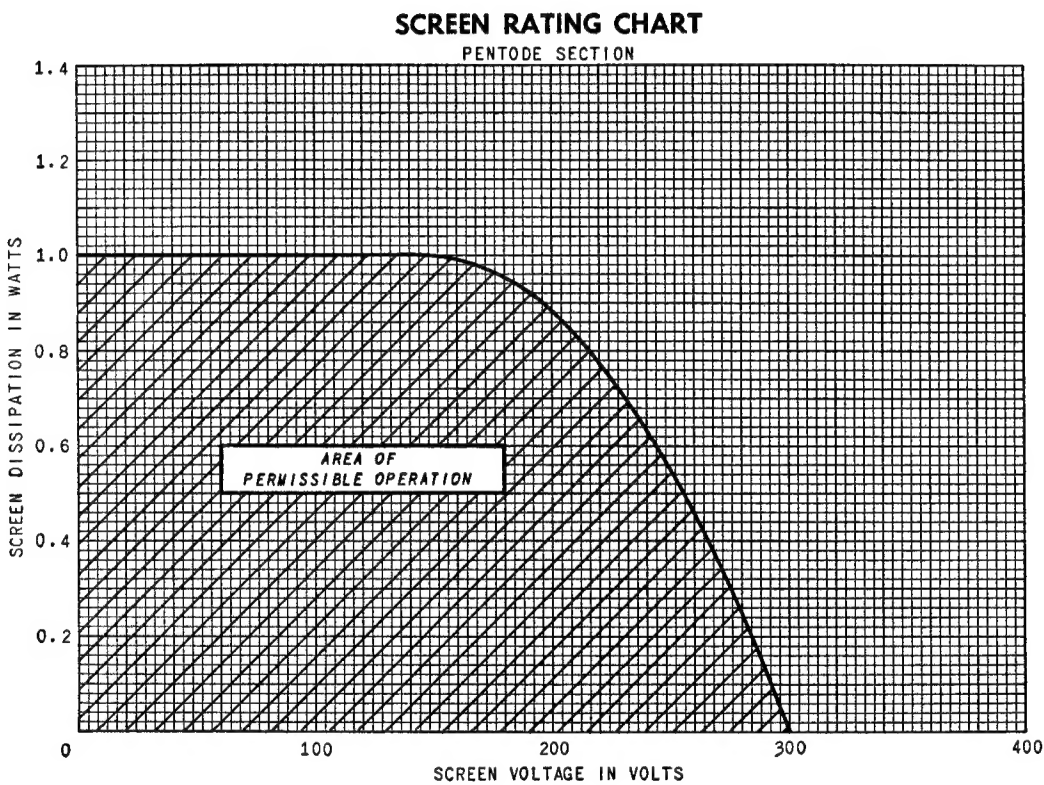
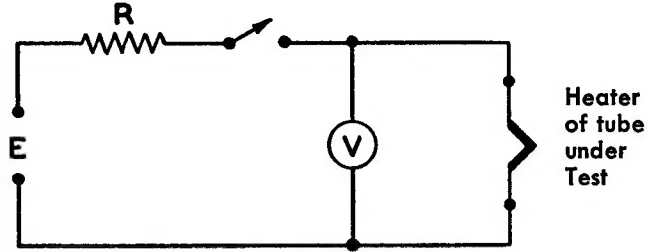
CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER

	Pentode Section	Triode Section
Plate Voltage	200	150 Volts
Screen Voltage	125	... Volts
Grid-Number 1 Voltage	−5 Volts
Cathode-Bias Resistor	82	... Ohms
Amplification Factor	17
Plate Resistance, approximate	150000	5150 Ohms
Transconductance	7000	3300 Micromhos
Plate Current	15	9.5 Milliamperes
Screen Current	3.4	... Milliamperes
Grid-Number 1 Voltage, approximate		
<i>I_b</i> = 100 Microamperes	−8	−14 Volts

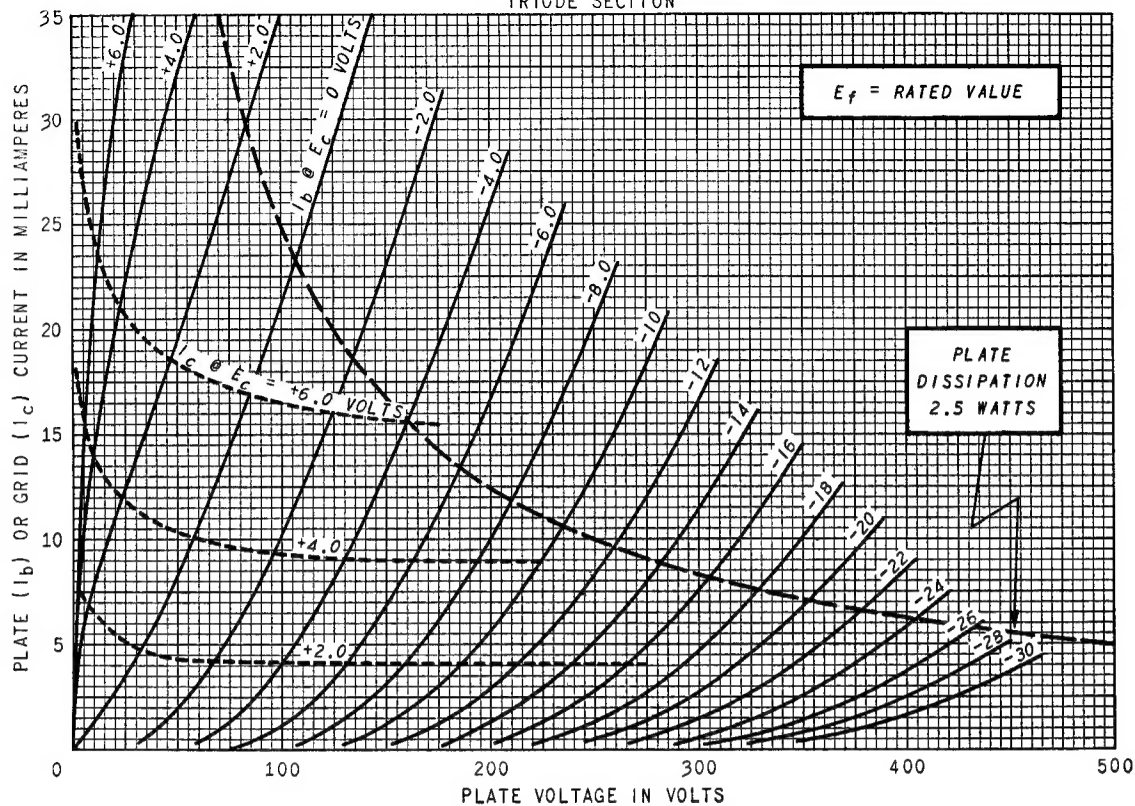
Note: The triode section of the 6BH8 may be diode-connected and employed as a high-perveance diode in video-detector applications. The diode operation can be obtained either with the triode grid connected to the triode plate and the combination operated as the plate of the diode, or with the triode plate grounded and the triode grid operated as the plate of the diode.

* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals to increase from zero to the heater test voltage (V_1). For this type, $E=25$ volts (RMS or DC), $V_1=5.0$ volts (RMS or DC), and $R=31.5$ ohms.
† Without external shield.



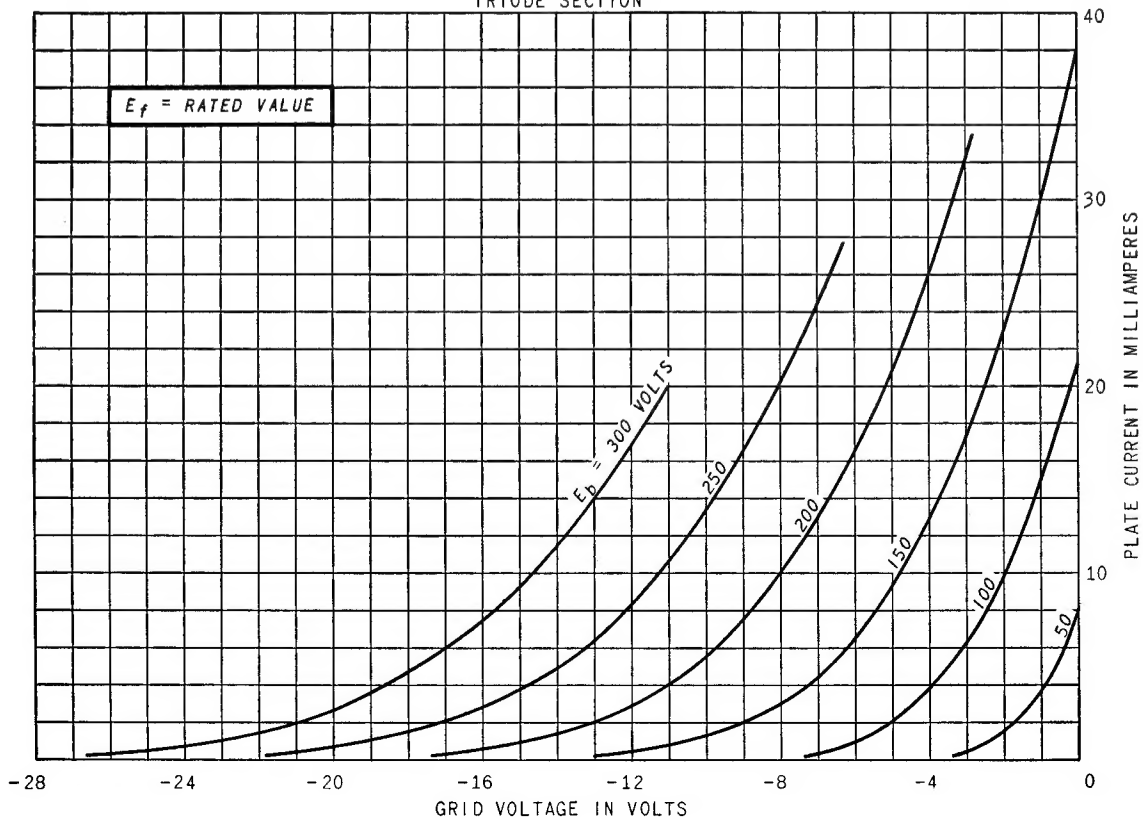
AVERAGE PLATE CHARACTERISTICS

TRIODE SECTION

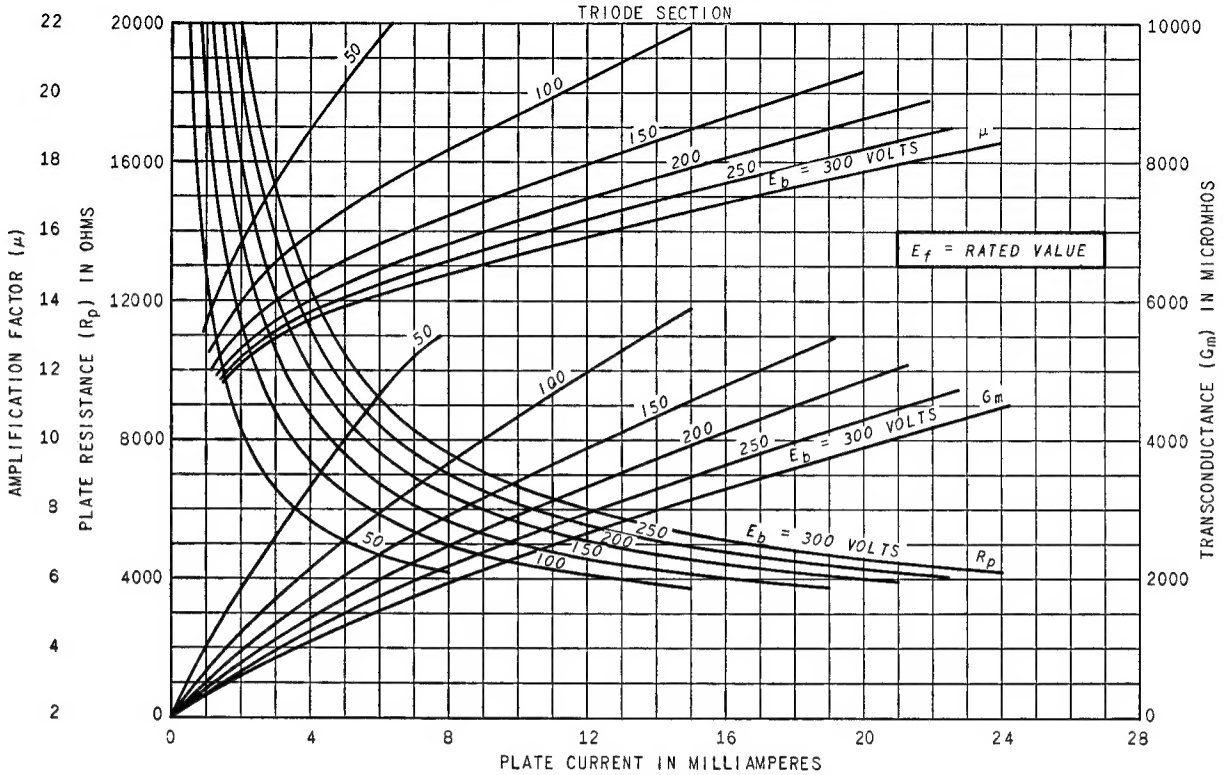


AVERAGE TRANSFER CHARACTERISTICS

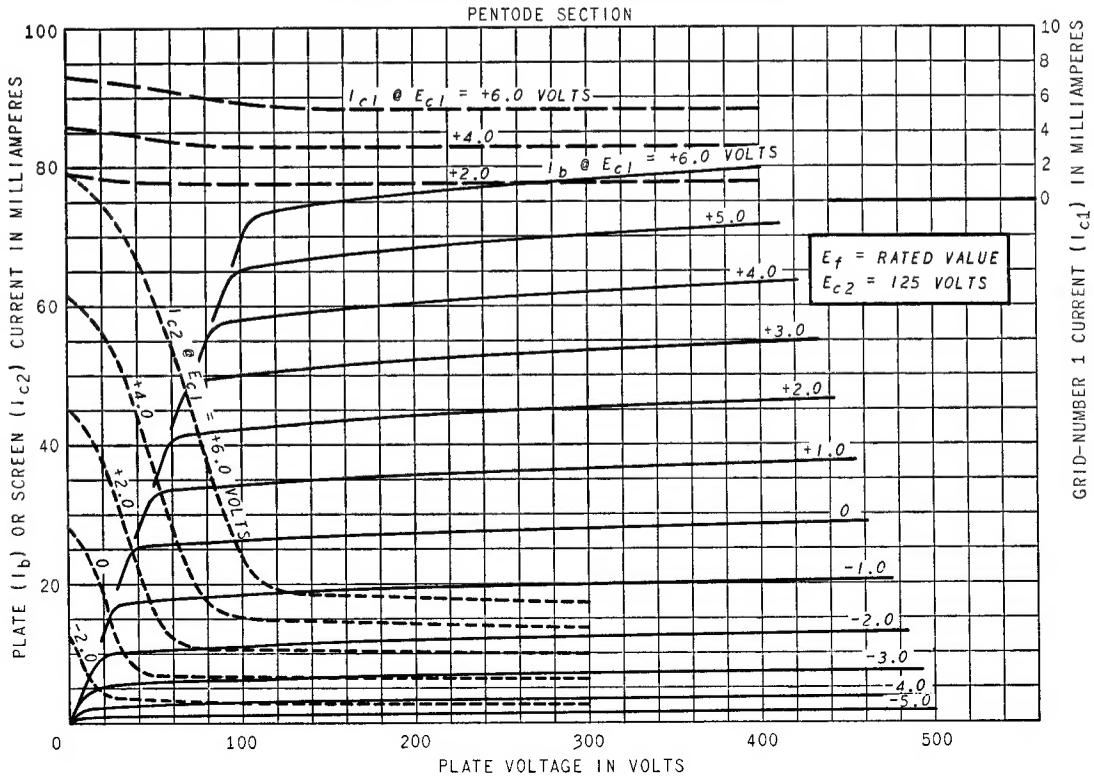
TRIODE SECTION



AVERAGE CHARACTERISTICS

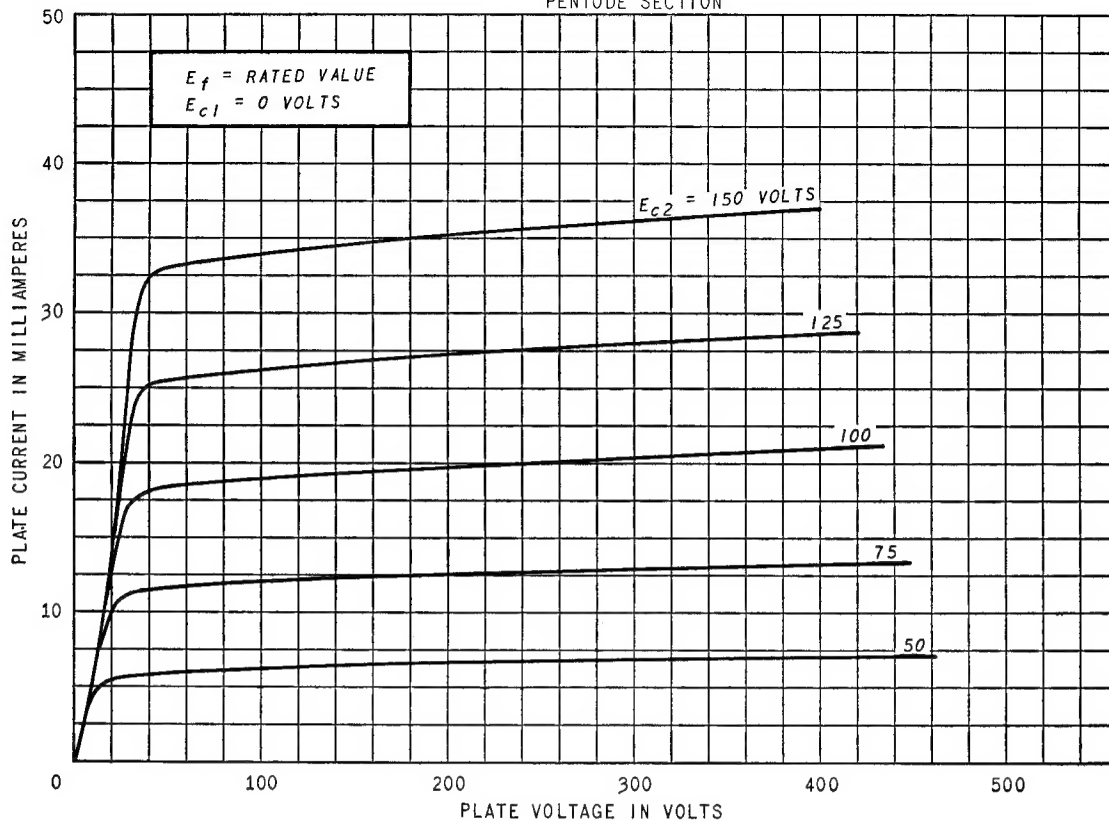


AVERAGE PLATE CHARACTERISTICS



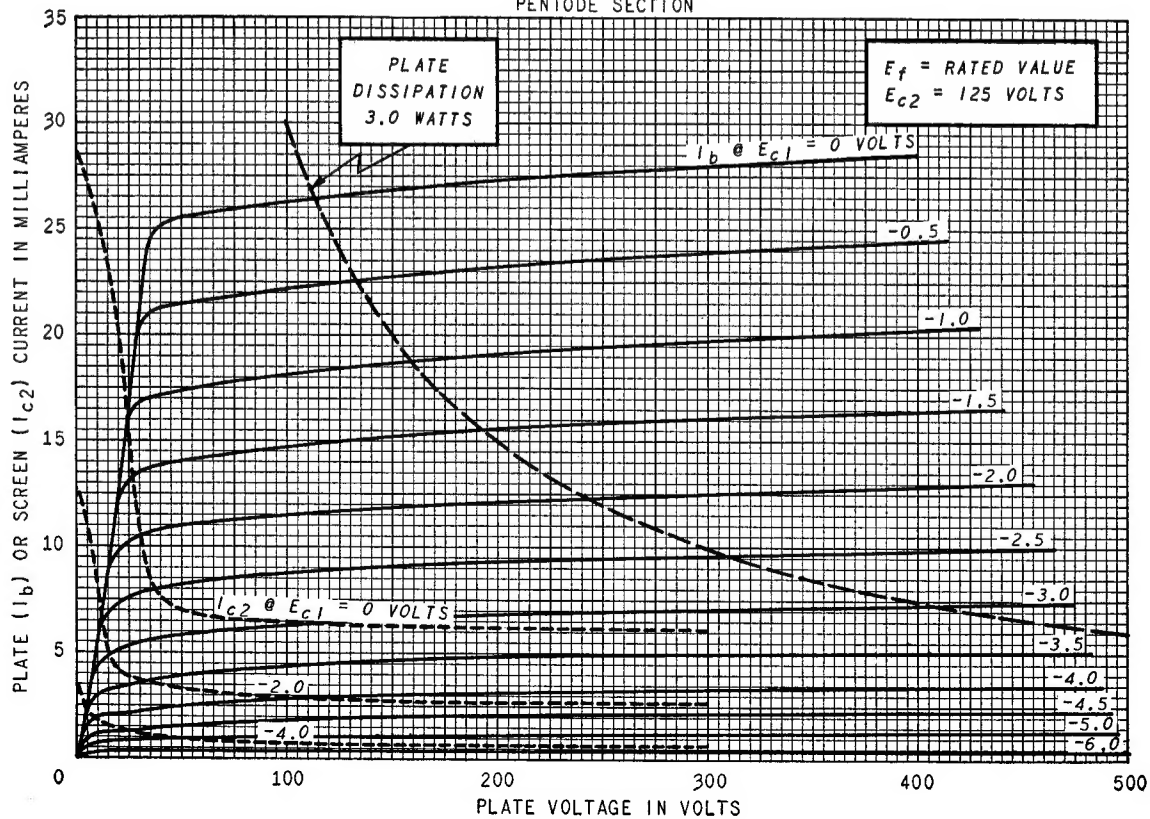
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



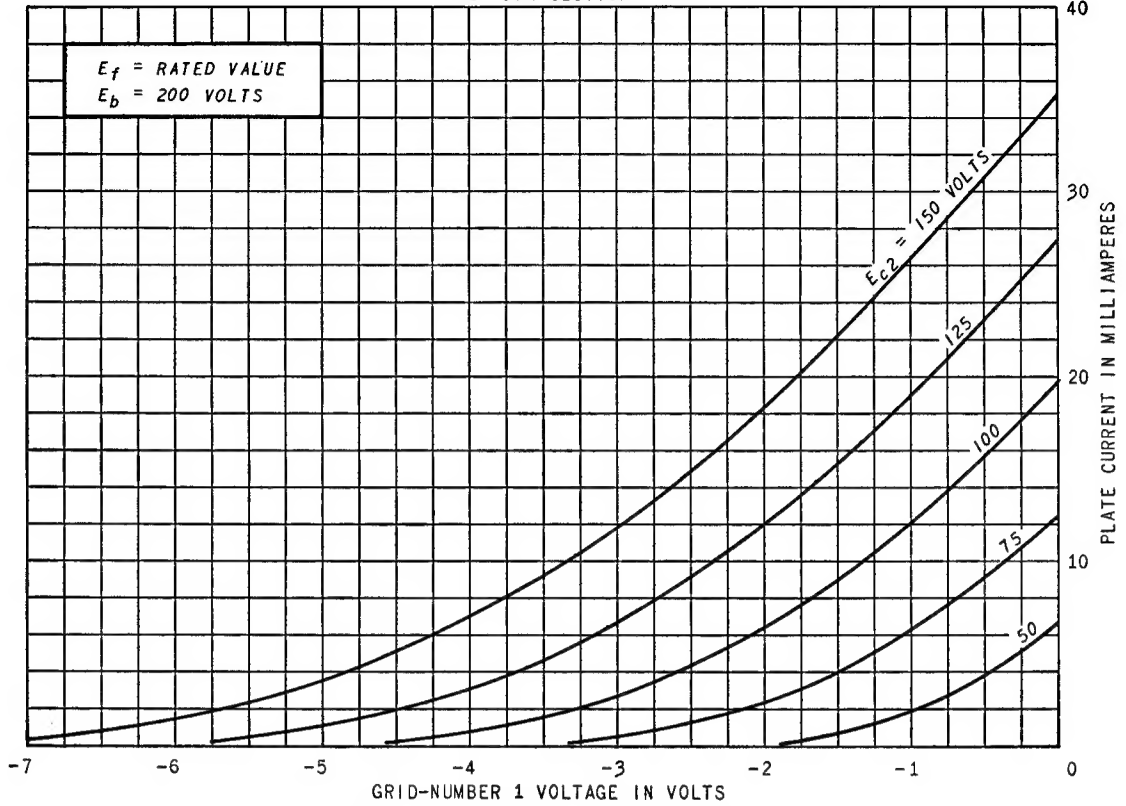
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



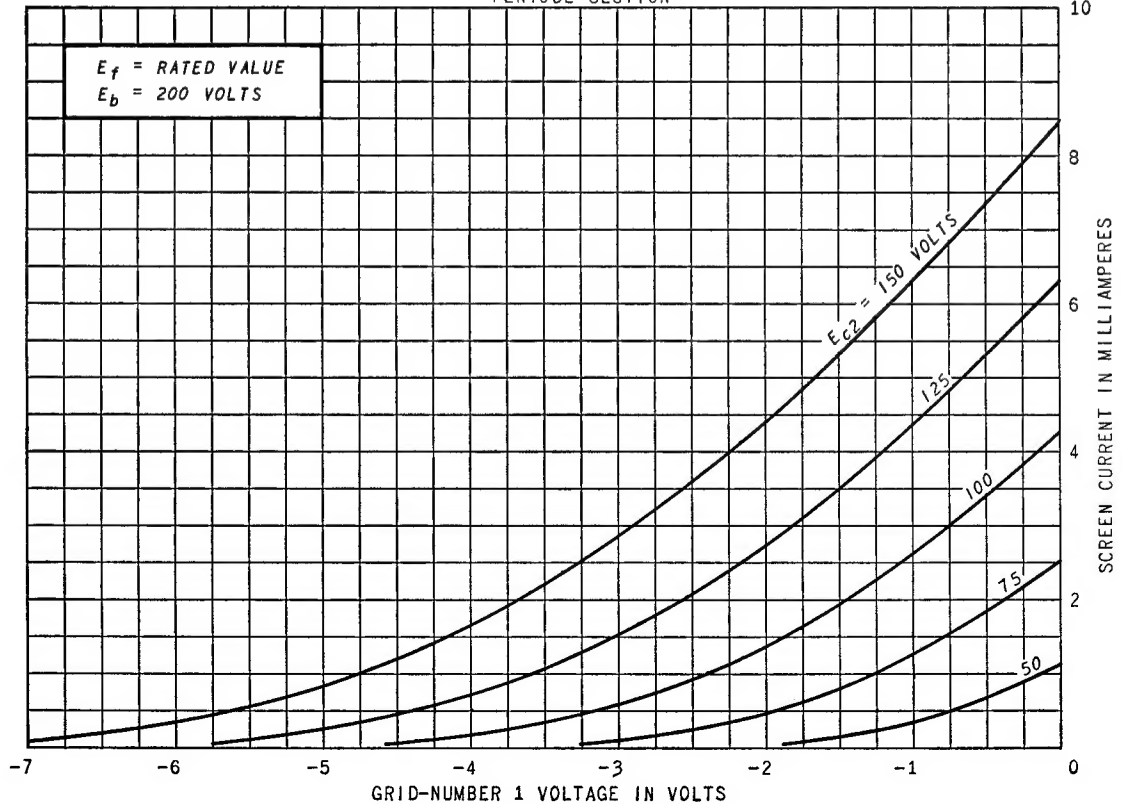
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



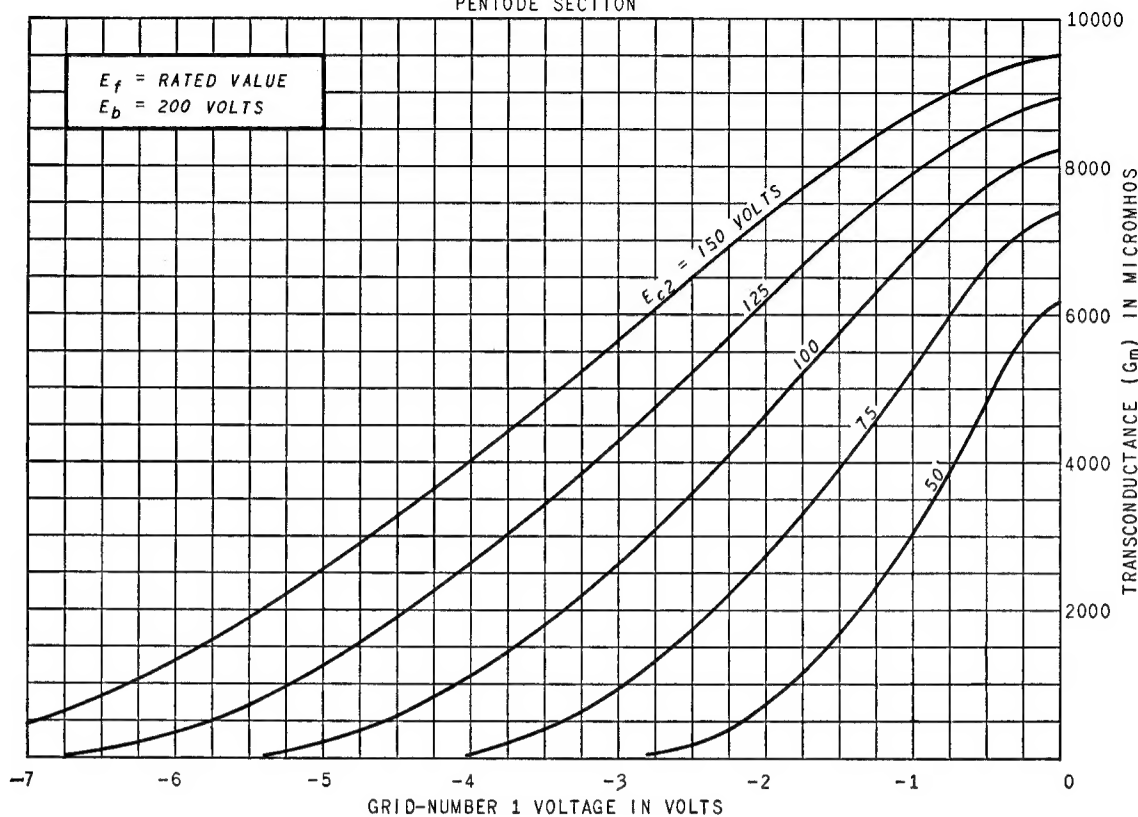
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



TUBE DEPARTMENT

GENERAL  **ELECTRIC**

Schenectady 5, N. Y.